

### **ELEMENT SUMMARY INFORMATION**

**Element:** 5.1.9 Reduced Vertical Separation Minimum (RVSM)

### **Purpose of this Element** (Air Carrier's responsibility):

To provide standards for equipment and maintenance of aircraft to operate in any air space or route where aircraft are separated by 1,000 feet vertically between flight level 290 and 410 inclusive.

### **Objective** (FAA responsibility):

To determine if the air carrier's Reduced Vertical Separation Minimum (RVSM) process includes safety attributes.

### **Inputs:**

- Make, Model, and Series of Aircraft
- Areas of Operation
- Operations Specifications Paragraph B039
- Operations Specifications Paragraph B046
- Operations Specifications Paragraph D092
- Minimum Equipment (91-RVSM, Paragraph 8)
- 91-RVSM

#### **Output:**

• Aircraft which are equipped, maintained, and capable of operating in RVSM airspace.

### **Performance Measures:**

- The Air Carrier complies with the provisions of Operations Specifications Paragraph D092.
- The Air Carrier's RVSM Maintenance Document meets or exceeds the standards contained in 91-RVSM.
- The Air Carrier has maintenance accomplished in accordance with the standards of the RVSM Maintenance Document.
- The Air Carrier makes the RVSM Maintenance Document available for use by the person(s) performing the RVSM maintenance.

### SRR:

- 91.703 (a)(4) Operations of civil aircraft of U.S. registry outside of the United States
- 91.706 Operations within airspace designed as Reduced Vertical Separation Minimum Airspace
- 121.375 Maintenance and preventative maintenance training program

### Other CFRs and/or FAA Guidance:

- 91-RVSM "Approval of Aircraft and Operators for Flight in Airspace Above Flight Level 290 Where a 1,000 Foot Vertical Separation Minimum is Applied" <sup>1</sup>
- FAA Order 8300.10, Appendix 4, FSAW 97-14, "Additional Maintenance Requirements for Operational Approval of Operators Requesting RVSM Approval"
- Preamble 65 FR 5935, "Reduced Vertical Separation Minimum (RVSM)"
- AC 91-70, "Oceanic Operations"
- North Atlantic MNPS Airspace Operations Manual Seventh Edition
- HBAT 00-03 NAT/MNPS and RVSM airspace flight level changes to the operations specifications, B039 and B046
- HBAW 00-04 NAT/MNPS and RVSM airspace flight level changes to the operations specifications, B039 and B046

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<sup>&</sup>lt;sup>1</sup> 91-RVSM is a memorandum dated APR 7, 1994 that provides interim guidance material on the approval of Air Carriers/aircraft for RVSM operations.

### **SRR SPECIFIC INFORMATION**

SRR	Intent	Inspectors
91.703(a)(4)	To require compliance with FAR 91-706	Certification: Avionics
	when operating in RVSM airspace.	Surveillance: Avionics
91.706	To provide requirements for an Air Carrier to	Certification: Avionics
	operate in airspace designated as RVSM as	Surveillance: Avionics
	specified in Part 91, Appendix G, when the	
	Air Carrier is authorized to conduct those	
	operations.	
121.375	To provide a requirement for the Air Carrier	Certification: Avionics
	or its maintenance providers to develop	Surveillance: Avionics
	training program for maintenance and	
	inspection personnel.	

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 1 - RESPONSIBILITY ATTRIBUTE			
<b>Objective:</b> To determine if there is a clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of the Reduced Vertical Separation Minimum (RVSM) process.			
To meet this objective, the inspector will accomplish the following tasks:			
1. Identify the person who is responsible for the quality of the Reduced V (RVSM) process.	ertical Separation Minimum		
2. Review the description in the Manual that delineates the duties and res	ponsibilities of the person.		
3. Evaluate the person's qualifications and work experience (or resume',	f appropriate).		
4. Review the appropriate organizational chart.			
5. Discuss the Reduced Vertical Separation Minimum (RVSM) process w	vith the person.		
To meet this objective, the inspector will answer the following questions:			
1. Is there a clearly identifiable person who is answerable for the quality of the Reduced Vertical Separation Minimum (RVSM) process?	YES If yes, provide the name:  No If no, explain:		
2. Does the person understand the procedures associated with the	☐ No If no, explain: ☐ YES If no, explain:		
Reduced Vertical Separation Minimum (RVSM) process?	□ No		
3. Does the person understand the controls associated with the Reduced Vertical Separation Minimum (RVSM) process?	☐ YES If no, explain: ☐ NO		
4. Does the person understand the interfaces associated with the Reduced Vertical Separation Minimum (RVSM) process?	☐ YES If no, explain: ☐ NO		
5. Does the person understand the process measurements associated with the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
6. Is the responsibility of this position clearly documented in the air carrier's Manual(s)?	☐ YES If no, explain: ☐ NO		
7. Are the qualification standards for this position clearly documented in the air carrier's manual?	☐ YES If no, explain: ☐ NO		
7a Are the qualification standards for this position appropriate for the duties that are assigned?	YES If no, explain:		
8. Does the person meet the qualification standards?	YES If no, explain:		
9. Does the person acknowledge that he/she has responsibility for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
10. Does the person know who has authority to establish and modify the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 2 – AUTHORITY ATTRIBUTE			
<b>Objective:</b> To determine if there is a clearly identifiable, qualified, and knowledgeable person with the authority to establish and modify the Reduced Vertical Separation Minimum (RVSM) process.			
To meet this objective, the inspector will accomplish the following tasks:			
Identify the person who has the authority to establish or modify the Re Minimum (RVSM) process.	duced Vertical Separation		
2. Review the description in the Manual that delineates the duties and res	ponsibilities of the person.		
3. Evaluate the person's qualifications and work experience (or resume', i	if appropriate).		
4. Review the appropriate organizational chart.			
5. Discuss the Reduced Vertical Separation Minimum (RVSM) process w	with the person.		
To meet this objective, the inspector will answer the following questions:			
1. Is there a clearly identifiable person who has authority to establish and modify the air carrier's policies for the Reduced Vertical Separation Minimum (RVSM) process?	YES If yes, provide the name:  No If no, explain:		
Does the person understand the procedures associated with the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
3. Does the person understand the controls associated with the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
4. Does the person understand the interfaces associated with the Reduced Vertical Separation Minimum (RVSM) process?			
5. Does the person understand the process measurements associated with the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
6. Is the authority of this position clearly documented in the air carrier's Manual(s)?	YES If no, explain:		
7. Are the qualification standards for this position clearly documented in the air carrier's manual?	YES If no, explain:		
7a Are the qualification standards for this position appropriate for the duties that are assigned?	YES If no, explain:		
8. Does the person meet the qualification standards?	YES If no, explain:		
9. Does the person acknowledge that he/she has authority for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
10. Does the individual know who has the responsibility for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		
11. Are the procedures for delegation of authority clearly documented for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:		

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 3 – PROCEDURES ATTRIBUTE			
Objective: To determine if the air carrier has documented procedures for accomplishing the Reduced Vertical Separation Minimum (RVSM) process.			
To meet this objective, the inspector will accomplish the following tasks:			
1. Review the documented instructions and information related to the Re Minimum (RVSM) process to ensure that they contain who, what, wh	ere, when, and how.		
2. Review the FAA Guidance and Specific Regulatory Requirements (SI supplemental information section of this SAI.	RR) included in the		
3. Discuss the Reduced Vertical Separation Minimum (RVSM) process gain an understanding of the procedures.	with appropriate personnel to		
4. Observe the Reduced Vertical Separation Minimum (RVSM) process the procedures.	to gain an understanding of		
To meet this objective, the inspector will answer the following questions:			
1. Do written procedures exist for the Reduced Vertical Separation Minimulation include as a minimum:	mum (RVSM) process, to		
1.1 An adequate parts control program that precludes the possibility of installing non-approved height keeping equipment in RVSM approved aircraft?	YES If no, explain:		
1.2 A method of ensuring that any modification or change in RVSM equipment be coordinated with the assigned principal inspector after receiving concurrence from the ACO, airframe manufacturer, or the approved design organization?	☐ YES If no, explain: ☐ NO		
1.3 A method for the identification and classification of structural repairs and modifications in and/or around the pitot/static probes and nearby doors as well as equipment repairs and modifications, which may have affected the alignment or calibration of the height keeping equipment, as required inspection items (RII)?	YES If no, explain: No		
1.4 Any additional test and inspection requirements for maintaining RVSM qualification that were identified during initial RVSM qualification.	☐ YES If no, explain: ☐ NO		
1.5 Special equipment and calibration requirements. (E.g. skin waviness).	YES If no, explain: No		
1.6 Do written procedures require the Air Carrier to use the RVSM training curriculum for training persons who perform RVSM maintenance? [SRR 121.375]	☐ YES If no, explain: ☐ NO		
1.7 Do written procedures provide detailed instructions and information for maintenance action to be taken when the Air Carrier is notified by the Central Monitoring Agency of an altimetry system error or altitude deviation?	YES If no, explain:		

5.1.9 Reduced Vertical Separation Minimum (RVSM)	
SECTION 3 – PROCEDURES ATTRIBUTE	
1.8 Provisions for ensuring that all RVSM maintenance personnel have been properly trained, qualified, and authorized to release aircraft for RVSM operations.	YES If no, explain: No
1.9 Do written procedures require notification of the flight crew when an aircraft is determined to be non-RVSM capable for dispatch? [SRR 91.706]	☐ YES If no, explain: ☐ NO
1.10 Do written procedures provide detailed instructions and information for use by persons performing RVSM maintenance? [SRR 91.706]	☐ YES If no or, explain: ☐ NO
1.11 Procedures to notify the assigned principal inspector within 72 hours of any gross height keeping errors.	☐ YES If no, explain: ☐ NO
2. Do the procedures identify: who, what, where, when and how?	☐ YES If no, explain: ☐ NO
3. Are the procedures in compliance with the CFR(s)?	☐ YES If no, explain: ☐ NO
4. Do the procedures conform to other written guidance (E.g., Operations Specifications, FAA Orders, Airworthiness Directives, Advisory Circulars, Handbook Bulletins, Directives, and Manufacturer's Recommendations)?	☐ YES If no, explain: ☐ NO
5. Does the air carrier have the resources to support the written procedures for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain:
6. If alternate procedures exist for use during irregular conditions, do they achieve the same desired results as the primary procedures so that an equivalent level of safety is maintained? (E.g., a manual system used as a result of equipment failure).	☐ YES If no, explain: ☐ NO ☐ N/A, No alternate procedures exist for this element
7. Are the procedures published in different manuals relating to the Reduced Vertical Separation Minimum (RVSM) process consistent?	YES If no, explain: No
8. Does the air carrier have a documented method for assessing the impacts of procedural changes to the Reduced Vertical Separation Minimum (RVSM) process?	☐ YES If no, explain: ☐ NO

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 4 – CONTROL ATTRIBUTE			
<b>Objective:</b> To determine if checks and restraints are designed into the Reduced Vertical Separation Minimum (RVSM) process to ensure a desired result is achieved.			
To meet this objective, the inspector will accomplish the following tasks:			
Review the documented instructions and information related to the Red Minimum (RVSM) process.	luced	l Verti	ical Separation
Review the FAA Guidance and Specific Regulatory Requirements (SR supplemental information section of this SAI	R) in	clude	d in the
3. Discuss the Reduced Vertical Separation Minimum (RVSM) process w gain an understanding of the controls.	ith a	pprop	riate personnel to
4. Observe the Reduced Vertical Separation Minimum (RVSM) process t the controls.	o gai	n an u	inderstanding of
To meet this objective, the inspector will answer the following questions:			
1. Are the following checks and restraints built into the Reduced Vertical (RVSM) process:	Sepa	ration	n Minimum
1.1 Does the Air Carrier perform a RVSM inspection of each aircraft prior to departure into oceanic airspace?		YES No	If no, explain:
1.2 Prevention of the installation of non-RVSM parts on RVSM approved aircraft? (E.g. computer flags, identification and segregation)		YES	If no, explain:
1.3 Prior to RVSM changes, concurrence is received from the assigned principal inspector?		YES No	If no, explain:
1.4 Required inspection items are accomplished prior to RVSM aircraft being returned to service?		YES No	If no, explain:
1.5 Only special equipment within specified calibration requirements is used to return RVSM aircraft to service?		YES	If no, explain:
1.6 The carrier has a method to ensure that only RVSM trained, authorized, and qualified persons perform RVSM maintenance?		YES No	If no, explain:
1.7 Central Monitoring Agency error or altitude deviation reports are acted on and monitored for recurring problems?		YES No	If no, explain:
1.8 The carrier has a method to ensure that only RVSM trained, authorized, and qualified persons release aircraft for RVSM operation?		YES No	If no, explain:
1.9 A method of notification of flight crew when an aircraft is determined to be non-RVSM capable for dispatch? (E.g. log book entry, placard, or dispatch release)		YES No	If no, explain:

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 5 - PROCESS MEASUREMENT ATTRIBUTE			
<b>Objective:</b> To determine if the air carrier measures and assesses the Red Minimum (RVSM) process, to identify and correct problems or potential	-		
To meet this objective, the inspector will accomplish the following tasks:			
1. Review the documented instructions and information related to the R Minimum (RVSM) process.	educed Vertical Separation		
2. Discuss the Reduced Vertical Separation Minimum (RVSM) process gain an understanding of the process measures.	with appropriate personnel to		
3. Observe the Reduced Vertical Separation Minimum (RVSM) process the process measures.	s to gain an understanding of		
To meet this objective, the inspector will answer the following questions:			
1. <deleted></deleted>			
2. Does the air carrier's Reduced Vertical Separation Minimum (RVSM process measurements?	I) process include the following		
2.1 The Air Carrier audits the RVSM process to ensure that it complies with the Operations Specifications Paragraph D092?	☐ YES If no, explain: ☐ NO		
2.2 The Air Carrier audits the RVSM process to ensure that it complies with the interim guidance included in Advisory Circular 91-RVSM?	YES If no, explain: No		
2.3 The Air Carrier audits the RVSM process to ensure it complies with the RVSM Maintenance Document?	YES If no, explain:		
3. Does the air carrier document their process measurement methods and results?	☐ YES If no, explain: ☐ NO		
4. Are the air carrier's process measurement methods effective?	☐ YES If no, explain: ☐ NO		
5. Does the air carrier use their process measurement results to improve their programs?	☐ YES If no, explain: ☐ NO		
6. Are the process measurement results accessible to the FAA?	YES If no, explain:		
7. Does the organization that conducts the process measurement have direct access to the person with responsibility for the Reduced Vertical Separation Minimum (RVSM) process?	☐ YES If no, explain: ☐ NO		
8. Does the air carrier have the resources to support the process measurement for the Reduced Vertical Separation Minimum (RVSM) process?	YES If no, explain: No		

5.1.9 Reduced Vertical Separation Minimum (RVSM)			
SECTION 6 – INTERFACES ATTRIBUTE			
<b>Objective:</b> To determine if the air carrier identifies and manages the interactions between the Reduced Vertical Separation Minimum (RVSM) process and the other element processes within the air carrier organization.			
To meet this objective, the inspector will accomplish the following tasks:			
1. Review the documented instructions and information related to the R Minimum (RVSM) process.	educed Ve	ertical Separation	
2. Discuss the Reduced Vertical Separation Minimum (RVSM) process gain an understanding of the interfaces.			
3. Observe the Reduced Vertical Separation Minimum (RVSM) process the interfaces.	s to gain ar	n understanding of	
To meet this objective, the inspector will answer the following questions.	•		
Are the following interfaces identified for the Reduced Vertical Sepa process:	ration Mir	nimum (RVSM)	
1.1 Appropriate Operational Equipment (Element 1.1.2)	☐ YES ☐ NO	If no, explain:	
1.2 Airworthiness Release or Log Book Entry (Element 1.2.1)	☐ YES ☐ NO	If no, explain:	
1.3 Major Repairs and Alterations (Element 1.2.2)	☐ YES ☐ NO	If no, explain:	
1.4 Maintenance Log/Recording Requirements (Element 1.2.3)	☐ YES ☐ NO	If no, explain:	
1.5 Maintenance Program (Element 1.3.1)	☐ YES ☐ NO	If no, explain:	
1.6 Inspection Program (Element 1.3.2)	YES NO	If no, explain:	
1.7 RII (Element 1.3.4)	☐ YES ☐ NO	If no, explain:	
1.8 MEL/CDL/Deferred Maintenance (Element 1.3.5)	YES NO	If no or N/A, explain:	
	□ N/A		
1.9 Outsource Organization (Element 1.3.7)	☐ YES ☐ NO	If no or N/A, explain:	
1.10 Control of Calibrated Tools and Test Equipment (Element	N/A YES	If no, explain:	
1.3.8)	□ No		
1.11 Parts/Material Control/SUP (Element 1.3.10)	YES	If no, explain:	

5.1.9 Reduced Vertical Separation Minimum (RVSM) SECTION 6 – INTERFACES ATTRIBUTE	
1.12 Continuous Analysis and Surveillance (Element 1.3.11)	YES If no, explain:
1.13 GMM/Equivalent (Element 1.3.14)	YES If no, explain:
1.14 Minimum Navigational Performance Specifications (MNPS) (Element 1.3.27)	YES If no, explain:
1.15 Content Consistency Across Manuals (Element 2.1.2)	YES If no, explain:
1.16 Airman Duties/Flight Deck Procedures (Element 3.1.3)	YES If no, explain:
1.17 Aircraft Performance Operating Limitations (Element 3.1.10)	☐ YES If no, explain: ☐ NO
1.18 Dispatch or Flight Release (Element 3.2.1)	YES If no, explain:
1.19 MEL/CDL Procedures (Element 3.2.3)	YES If no or N/A, explain: NO N/A
1.20 Maintenance Training Program (Element 4.2.1)	☐ YES If no or N/A, explain: ☐ NO ☐ N/A
1.21 Training of Crewmember (Element 4.2.3)	YES If no, explain:
1.22 Training of Dispatcher (Element 4.2.5)	YES If no or N/A, explain: NO N/A
1.23 Outsource Crewmember Training (Element 4.2.9)	☐ YES If no or N/A, explain: ☐ NO ☐ N/A
1.24 Privileges – Airframe and Power Plant (Element 4.4.3)	YES If no, explain:
1.25 Repairmen Privileges and Limitations (Element 4.4.4)	YES If no, explain:
1.26 Line Stations (Servicing and Maintenance) (Element 5.1.1)	☐ YES If no or N/A, explain: ☐ NO ☐ N/A
1.27 Weather Reporting Facilities/SAWRS Stations (Element 5.1.2)	☐ YES If no or N/A, explain: ☐ NO ☐ N/A
1.28 Use of Approved Areas, Routes, and Airports (Element 5.1.6)	YES If no, explain:

5.1	.9 Reduced Vertical Separation Minimum (RVSM)			
SI	ECTION 6 – INTERFACES ATTRIBUTE			
	1.29 Director of Maintenance (Element 7.1.1)		YES No	If no, explain:
	1.30 Chief Inspector (Element 7.1.2)	l	YES No	If no, explain:
	1.31 Director of Safety (Element 7.1.3)		YES No	If no, explain:
	1.32 Manual Currency (Element 2.1.1)		YES No	If no, explain:
	1.33 Content Consistency Across Manuals (Element 2.1.2)	l	YES No	If no, explain:
	1.34 (Manual) Distribution (Element 2.1.3)		YES No	If no, explain:
	1.35 (Manual) Availability (Element 2.1.4)		YES No	If no, explain:
2.	List any additional interfaces identified:			
3.	Are there written procedures for the use of air carrier personnel in the application of these interfaces?	l	YES No	If no, explain:
4.	Are there controls to ensure that interfaces occur?		YES No	If no, explain:
5.	Are the interfaces between the Reduced Vertical Separation Minimum (RVSM) process and other processes treated consistently in the Manual(s)?		YES	If no, explain: